INVESTIGATION INTO ATTITUDES OF SENIOR SECONDARY FEMALE STUDENTS TOWARDS MATHEMATICS IN (Government Secondary School, Chanchaga Bosso Local Government Area Niger State)

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CERTIFICATION

This research project has been read, supervised and certified by the under signed as part of the requirement for the award of the Nigeria Certificate in Education (N.C.E)

Project Supervisor — Date / Sign 08/01/2015

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DEDICATION

This project is ultimately dedicated to our loving parents for their persistent encouragement and supports both morally and financially.

ACKNOWLEDGEMENT

First and foremost, our appreciation and thanks goes to Almighty God for his grace, protection, guidance and mercy that have been over us since we started our studies in this College till date.

Our special thanks goes to our loving and caring parents for their moral and financial support throughout our studies.

We appreciate the effort of our supervisor, the lecturers in Department of Mathematics, College of Education Minna for their untiring efforts, encouragement, and guidance which contributed immensely to make us what we are today. Our prayer is that God will bless and reward them abundantly. (Amen)

Finally, we wish to appreciate the contribution of our typist (Prestige Biz Center), friends, course mates, well-wishers both within and outside the school environment towards the success of this project work.

May God bless you all. (Amen!)

ABSTRACT

The study seeks to investigate into the attitudes of senior secondary school female students towards mathematics in Chanchaga, Bosso Local Government Area, Niger State. The study adopted a descriptive survey design in which two research questions and one hypothesis were formulated to guide the study. The research hypothesis was tested by the means of questionnaire. From the statistical evidence, significant relationship was found between female students' interest / motivation and their academic achievement. Based on such findings, the study recommend among other things that, the teachers should avoid gender differences when dealing with the students so as to give the students equal chance to participate in the class and the girl child should develop interest in studying mathematics and not seeing mathematics as male folks oriented subject.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Mathematics as we all know is one of the core subjects or course in educational field more especially at pre-Nursery, Nursery, Primary and Secondary school levels. Without passing the subject at a credit level as a student, it is very difficult to be admitted into or enrolled into any tertiary institutions.

Mathematics has its own origin as a result of some practical problems.

Mathematics as a subject on its own has several activities or sub-branches of which includes counting, calculation involving basic operations, measuring, geometary, Algebra and the ability to think quantitatively (Adeniyi 1997) as quoted by Muhammed (2014).

Our school children today especially the female ones perceive mathematics as a difficult subject due to what is referred to a maths – phobia among students.

Many people claimed that girl – child does not participate well or has a good reputation towards mathematics when compared to other gender. There is this popular saying that "girl – child education ends in kitchen. So for this reason, people claim that female students find mathematics very difficult.

1.2 Statement of the Problem

In accordance to mere observation made among both male and female students in respect to their performance in mathematics through tests, quiz etc has shown that male students perform better than the other sex (female).

It is thought that most of female performances in mathematics are related to problems like, parental conception about girl-child education, gender marginalization, psychology of the girl-child among others and the teacher's methodoly.

This research intends to study such problems that caused the negative attitude of a girl-child towards mathematics and also to suggest possible solutions to those problems.

1.3 Purpose of the Study

The purpose of this research project is to investigate the followings;

(i) The extent to which methodology of the teacher affects the attitude of girl – child towards mathematics.

(ii) Why the female student tend to develop negative attitude towards studying mathematics.

(iii) To suggest possible solutions to those factors responsible for the low performance of female students in mathematics.

1.4 Research Questions

The following were the research questions set to keep the work in focus.

(a) Is there gender difference between male and female senior secondary school students performance in mathematics in chanchaga, Bosso Local Government Area?

(b) Is there any visible attitudinal difference between male and female students in studying mathematics?

1.5 Hypothesis

The following hypothesis was designed to find the possible solutions to the research questions;

(a) There is no significant attitudinal difference between male and female Senior Secondary School students towards studying mathematics.

1.6 Significance of the Study

The importance of this research cannot be over emphasized. The study is relevant in identifying some of the basic phenomenon that can possibly affect the academic performance of a female student in the perspective of mathematics and suggest solutions in which this phenomenon could be tackled.

This study can be relevant to teachers through the way or means of providing them with several techniques and methods to adopt so as to carry both the male and female students along such that to avoid any form of gender disparity.

The study will also help in promoting and eradicating the parental negative conception on girl-child education.

1.7 Scope and Limitation

The study would be restricted to senior secondary school students in chanchaga, Bosso Local government.

However, as a result of time and financial constraints the study could not cover the entire students of senior secondary schools in Chanchaga, Bosso local government.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviews some vital literatures related to the attitudes aimed at investigating the female student performances in mathematics.

The review is carried out under the following headings;

- ✓ Conceptual Framework
- ✓ Positive Attitudes Towards Mathematics
- ✓ Negative Attitudes Towards Mathematics
- ✓ Attitude of parental Towards Girl – Child Education
- ✓ Attitude of female students towards mathematics

2.2 Conceptual Framework

Research on attitudes has a long history in mathematics education. The construct find its origin in the field of social psychology (All port) as quoted by Zan. 2003, in connecting with voting, buying goods etc.

The attitude construct gains renewed popularity with the re-evaluation of effect in the learning of mathematics: in the classification of (Mc leod) as quoted by Martino 2003, it is considered together with "belief" and "emotions" one of the construct that constitute the effective domain.

Muhammed (2014) quoted Imogie and Fatiku (2002) "noted that the way society treats the woman (female gender) determines the extent to which they can exhibit their parentals and contribute to national development.

A society that tends to encourage or educate their women in equilibrium to the male are bridging the gap between gender disparity and giving room for effective participation of both sex in the nation's development.

2.3 Positive Attitudes Towards Mathematics

Positive attitudes towards mathematics can be defined as the positive disposition towards an aspect of mathematics that has been acquired by an individual (student) through his/her beliefs and experience but which could be changed. Quoted (Eshun 1935 7, page 2) by Muhammed and Waheed 2012).

Mohammed and Waheed (2013, when reviewing literarture aimed at understanding attitudes and influences on their development in relation to differences between students, identified three groups of factors that plays a vital role in influencing students attitudes positively: factors associated to students themselves are; (e.g mathematical achievement, anxiety, self-efficacy and self-concept, motivation and experiences at school); factors associated with the school, teacher and teaching (e.g teaching materials, classroom management, teacher's knowledge, attitude towards mathematics, guidance, beliefs), finally, factors from the home, environment and society (e.g educational background, parental expectation of the child).

Attitude can be seen as more or less positive. A positive attitude towards mathematics reflects a positive emotional dispositions in relation to the

subject. These emotional dispositions have an impact on an individuals behavior (student's behaviour) as one is likely to achieve better in a subject that one enjoys, has confidence in or finds useful.

For these reasons, positive attitudes towards mathematics are desirable since it may influence one's willingness to learn and also the benefits one can derive from mathematics instructions.

2.4 Negative Attitudes Towards Mathematics

Eshun (1989) sees negative attitude towards mathematics as the negative disposition towards an aspect of mathematics that has been acquired by an individual (student) through belief and experiences but which can be changed. As reviewed by Philippou (2010).

Nicolaidu's and Philippou (2010) showed that negative attitude are the result of frequent and repeated failures or problem when dealing with mathematical task and those negative attitudes becomes relatively permanent.

According to these authors (Nicolaidou and Philippous 2010), when children first go to school, they usually have positive attitude towards mathematics. However, as they progress, their attitude becomes less positive and frequently become negative at high school.

2.5 Attitude of Parents Towards Girl – Child Education

The extent to which a child behaves or react to education can be sometimes attributed to the attitudes and the philosophy of the child's parents/guardian.

Parents in general, have various influences on their children educationl aspirations (Muhammed, 2014). This connotes that if the parents have positive philosophy and attitudes towards the girl-child education, she is likely going to have a better achievement in terms of education but if not so, reverse is the case.

The family of a child has a relevant influence on the child academic performance and achievement, what the child learns at home and how his family motivates him/her towards education contributes to the success or failure in school (Muhammed, 2014).

2.6 Attitude of Female Students Towards Mathematics.

The lack of theoretical framework that connotes the research on attitude towards mathematics is partially shown by the fact that large portion of studies about attitudes do not provide a clear definition of the construct itself: Attitude tends rather to be defined implicitly and a posterity through the instruments used to measure it (leder, Daskalogiani and Simpson: 2000).

When a definition is explicitly given, or can be inferred, it mainly refer to one of the three following types;

(1) A "simple" definition of attitude; that describes it as the positive or negative degree of affect associated with a certain subject.

According to this point of view, the attitude toward mathematics is just a positive or negative emotional disposition toward mathematics (Mc Lead, Haladyna, Shoughnesty J. and Shoughnessy M.) as quoted by Di. Martino (2003).

(2) A multidimensional definition; which recongnises three components in the attitude; emotional response, beliefs, regarding the subject, behavior related to the subject. From this point of view, an individual's attitude towards mathematics is defined in a more complex way by the emotions that he/she associate with mathematics (Which, however, have a positive or negative value), by the individual's belief towards mathematics and by how she behaves (Hart 2004) reviewed.

(3) A bi-dimensional definition, in which behaviours do not appear explicitly (Dackologianni and Simpson 2000): attitude toward mathematics is therefore seen as the pattern of beliefs and emotion associated with mathematics.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is concern with the procedures and methodology that followed in this descriptive survey. The chapter will address the following sub-headings; research design, population of the study, sample and sampling techniques, instrument for data collection, Validity of the instrument, method of data collection and method of data analysis.

3.2 Research Design

Descriptive survey method is used for this study, because of its fact-finding tendency for a situation. Descriptive survey seek to determine present practices or opinion on a specified population.

This will afford collection of information directly from the representatives sample of the groups and conclusion will be drawn on the available information and will formed the perception of the entire population.

A descriptive survey attempt to determine the incidence, distribution and the interpretation among sociological and psychological variables.

This method will help the research to obtain the opinion of a representative sample of the target population.

3.3 Population of the Study

The population of this study comprised of all students (both male and female) in SS1, SS2 and SS3 of senior secondary school of Day Secondary School Chanchaga, Bosso Local government Area, Niger state.

TABLE 3.1 POPULATION OF THE STUDY

Classes	Number of male student	Number of female student	Total
SSI	130	105	235
SS 2	125	75	210
SS 3	100	95	195
TOTAL	355	275	640

Source: G.S.S (Kanguwa Chanchaga).

3.4 Sample and Sampling Techniques

Considering the population of the study the researchers selected only representative sample for the purpose of this study. One hundred and fifty (100) students (50 males and 50 females) were randomly selected from each level of senior secondary class. Table 3.2 shows the sampled population used for this study.

Table 3.2 Sample from the entire size

Class	Population (boys/Girls)		Sample size	
	Boys	Girls	Boys	Girls
SS 1	130	105	50	50
SS 2	125	75	50	50
SS 3	100	95	50	50
Total	355	275	150	150

3.5 Instrument for Data Collection

The researchers constructed questionnaire providing items (questions) on "Students Perception of mathematics". The questionnaire consisted of five items.

3.6 Validity of the Instrument

The validity of the instrument for this research work (questionnaire) was ensured through a careful and thorough scrutiny by a senior lecturer with specialization in mathematics from college of education Minna and at the same time, the project coordinator of mathematics department in college of education. Hence, the content of the instrument was found to be relevant to this study.

3.7 Method of Data Collection

The sampled students data used in this study were obtained from the information collected from the vice principal Academy of the school (Day Senior Secondary School Minna). The researcher used two weeks to conduct the data collection process. The first week was to obtain permission from the Head of the Mathematics Department of Niger State College of Education to use the public school for the study.

The researcher then used a day to visit the school to obtain permission to use the school, sampled the classes and number of student to be involved in the study.

The second week, the researcher went to the school and administered the questionnaire to the selected classes with the help of the head teacher. The responds from the questionnaire were put together which formed the data for the study.

3.8 Method of Data Analysis

The statistical instrument to analyze data of percentage which was then converted into polygons (graphs).

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The data gathered from the respondents through the questionnaire administered on the selected students of G.S.S Chanchaga, Bosso Local government Area of Niger State were analyzed based on the major objectives set to achieve at the beginning of this project research work.

Table 4.1: Question 1. I see mathematics as the simplest and easiest subject in academic curriculum.

Sex	Agree	Disagree	Undecided	Total
Male	78	42	30	150
Male (%)	52%	28%	20%	100%
Female	72	18	60	150
Female (%)	48%	12%	40%	100%

Source: Field Survey 2014

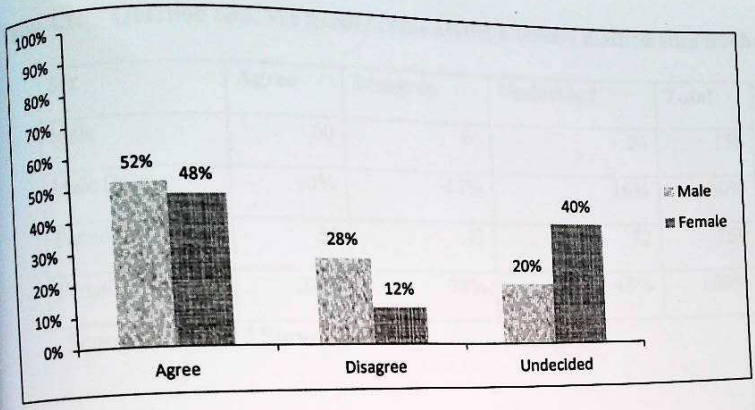

Chart 1

From the chart 1 above, it shows that out of 150 respondents (students) from both male and female, 52% of male and 48% of female agreed to the statement "I see mathematics as the simplest and easiest subject in academic curriculum" while 28% of male and 12% of female respondents disagreed with the statement and 20% and 40% of both male and female respondents respectively has no idea to the statement. Therefore, the finding shows that the male students (respondents) have higher positive view towards the subject (mathematics) compare to their female counterpart.

Table 4.2: **Question two. We hardly come across a female mathematics teacher**

Sex	Agree	Disagree	Undecided	Total
Male	60	66	24	150
Male (%)	40%	44%	16%	100%
Female	36	42	72	150
Female (%)	24%	28%	48%	100%

Source: Field Survey 2014

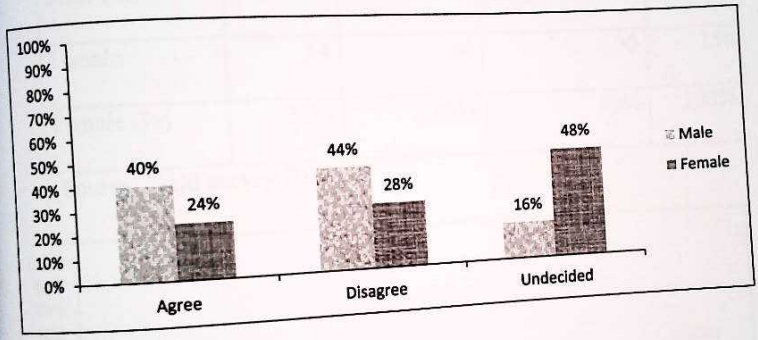

Chart 2

From the above chart 2, the result shows that out 150 male and 150 female respondents through the questionnaires administered respectively, 40% of male and 24% of female agreed to the question (statement) "We hardly come across a female mathematics teacher" and 44% of male and 28% of female disagreed (do not agree) with statement while 16% of male and 48% of female could not decide on the statement. From the analysis of the result, we find out that 44% of male and 28% of female students (respondents) do not see mathematics teaching as only male task alone while 40% of male and 24% of female students concurred that they

hardly come across female mathematics teacher, therefore, the finding shows that there are female folks in mathematics teaching profession.

Table 4.3: Question three. I want to study mathematics after my secondary school

Sex	Agree	Disagree	Undecided	Total
Male	78	48	24	150
Male (%)	52%	32%	16%	100%
Female	54	66	30	150
Female (%)	36%	44%	20%	100%

Source: Field survey 2014

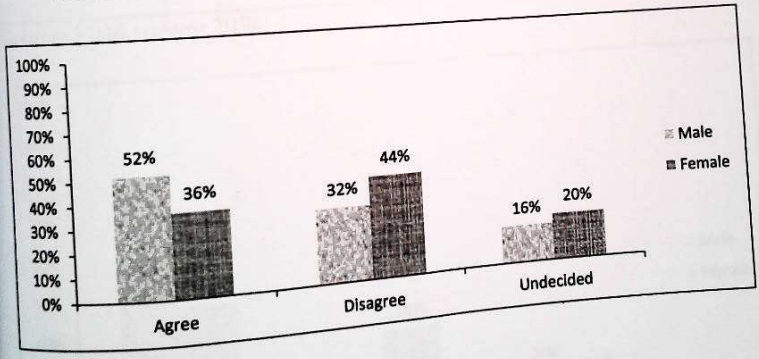

Chart 3

From chart 3 above, it indicate that 52% of 150 male respondents and 36% of female respondents have inetrest in studying mathematics, 32% of male and 44% of female respondents do not have inetrest in the studying the subject

(mathematics) while 16% of male and 20% of female respectively could not decide on whether studying the mathematics after secondary school or not. From the analysis, we find out that the level of interest in studying mathematics is more among male students (52%) compare to their female counterpart (36%).

Table 4.4: Question four. Mathematics is basically for the male folks only

Sex	Agree	Disagree	Undecided	Total
Male	90	30	30	150
Male (%)	60%	20%	20%	100%
Female	72	54	24	150
Female (%)	48%	36%	16%	100%

Source: Field survey 2014

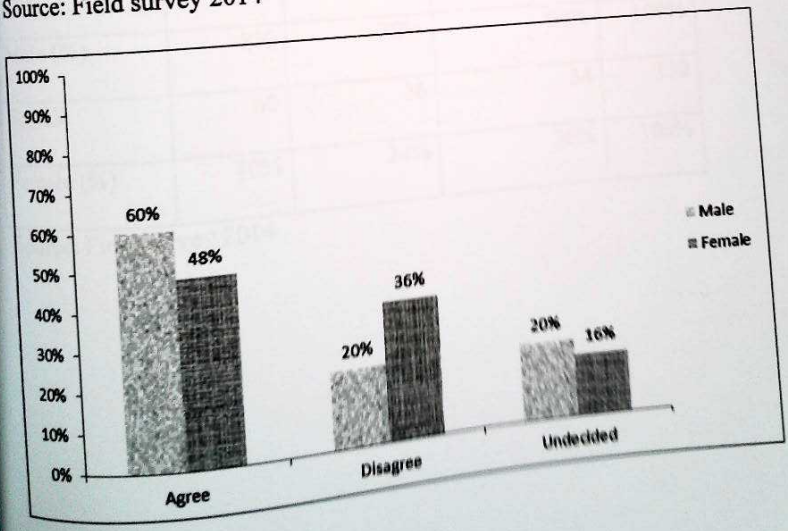

Chart 4

From the chart above, the result shows that 60% of male and 48% of female respondents agreed that mathematics is basically for male folk alone, 20% of male and 36% of female respondents disagreed with the statement (mathematics is basically for male folk only) while 20% of male and 16% of female respondents respectively could not decide on which folk basically engaged in mathematics. The finding from the analysis shows that male (60%) and female (48%) felt that mathematics is basically for male folk.

Table 4.5: Question five. Female students perform better than male students in mathematics

Sex	Agree	Disagree	Undecided	Total
Male	12	48	90	150
Male (%)	8%	32%	60%	100%
Female	60	36	54	150
Female (%)	40%	24%	36%	100%

Source: Field survey 2014

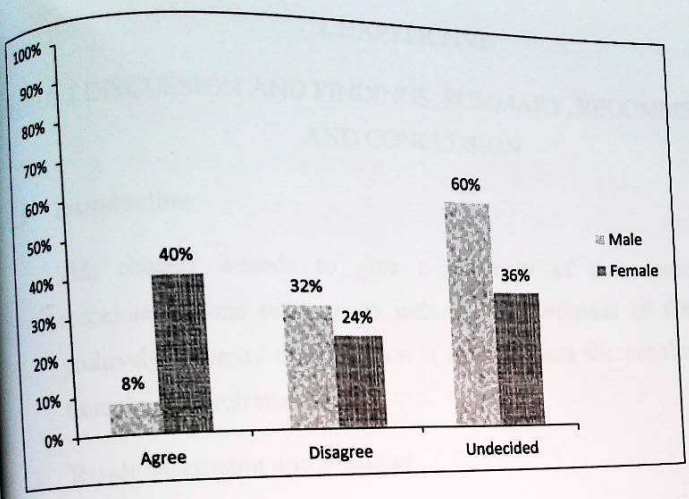

Chart 5

The chart 5 above indicate that 8% of the 150 male respondents and 40% of female respondents concurred to statement (female students perform better than male students in mathematics) and 32% of male and 24% of female respondents respectively disagreed to the statement while 60% of male respondents and 36% of female respondents have no opinion concerning the statement. The result of the finding shows that female students (40%) who involve in mathematics perform better than male student (8%).

CHAPTER FIVE

RESULT DISCUSSION AND FINDINGS, SUMMARY, RECOMMENDATION AND CONCLUSION

5.1 Introduction

This chapter intends to give a summary of the research findings, recommendations on how to influence the attitudes of female students positively towards mathematics. It also presents the conclusion gathered from the research study.

5.2 Result Discussion and Findings

From the data analyzed in the previous chapter, based on the two research questions set at the beginning of this project research work 150 male respondents and 150 female respondents were accessed and the results of the analysis indicates that 52% of male and 48% of female respondents perceived mathematics as an easy subject while 28% of male and12% of female respondents perceived mathematics as a difficult subject to undertake (table 4.1), we also find out that the interest of the male students was very high (52%) concerning mathematics compared to the female students (36%) (table 4.3) interest in the subject thereby making the male folks (60%) and 48% of female folks of the respondents sees mathematics as only male profession but only 20% of male and 36% (table 4.4) of female respondents believed that mathematics is not for a particular folk alone and also the analysis of the data shows that 8% of male and 40% of female respondents agree that female students who engaged in mathematics perform better than their male counterpart while 32% of male and 24% (table 4.5) of female

respondents do not agreed to the statement. Therefore, the findings from analysis shows that there is no significance difference between male and female folks in mathematics teaching profession as 40% of male agree that they hardly come across female teacher while the 44% (table 4.2) of female disagree to this statement and also the finding shows that mathematics is not only a male folks profession because 8% of male agreed that female students perform better than male students while 40% (table 4.5) of female students agreed to the statement but lack of interest was responsible for low participation of female students in mathematics as the result shows that 52% of male have interest in studying mathematics while only 36% (table 4.3) female students indicated their interest in studying mathematics.

5.3 SUMMARY AND CONCLUSION

This project research work was designed to investigate the attitudes of female students in senior secondary schools in Chanchaga Town in Bosso LGA of Niger state towards mathematics, 150 sample respondents were selected from each of male and female folks and questionnaires administered to them from which the results of the data obtained were analyzed and findings were obtained to make reasonable conclusion and recommendations. Conclusively, after careful analysis of the data, the researchers find out that attitude of female students towards mathematics was low as shown in the result that 52% of male have interest in mathematics compared to female students with 36% (table 4.3) level of interest. And this is as a result of low or poor orientation by the teachers and the adopted method of teaching by the teachers.

5.4 RECOMMENDATIONS

The following recommendations are made based on the findings;

1. The parents should encourage and also provide necessary textbooks to their children most especially the female ones
2. The teacher should avoid gender difference when dealing with the students so as to give the students (both male & female) equal chance to participate in the class
3. The girl –child should develop interest in studying mathematics and not seeing it as male folks oriented subject.

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Appendix

STUDENTS QUESTIONNAIRE

PART (A) (PERSONAL INFORMATIONS)

Please where many response options are provided, just tick (√) on the box that is most applicable to you.

PART (A)

Respondents Bio – data

1. Gender (a) Male ( ) (b) Female ( )

2. LEVEL (a) SSI ( ) (b) SSII ( ) (c) SSIII ( )

PART (B)

Please where many response option are provided, just tick (√) on the column that is most applicable to you.

OPTIONS: A- Agree with the statement, D- Do not Agree with the statement UD- undecided

STUDENTS PERCEPTION OF MATHEMATICS

S/NO	STATEMENT	A	D	UD
1	I see Mathematics as the simplest and easiest subject in academic curriculum			
2.	We hardly come across a female mathematics teacher			
3.	I want to study Mathematics after my secondary school			
4.	Mathematics is basically for the male folks only			
5.	Female students perform better in mathematics than male students			